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Technology Professional Development: Successful Strategies for Teacher Change. ERIC Digest.

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The goal of any professional development program is to inform and change teacher behavior as a result of new information. To this end, teachers and other educators spend countless hours in professional development activities learning to use new

instructional strategies or materials. Sometimes there is change, and sometimes the person goes right back to doing what he or she had been doing all along. Bob Pearlman, Director of Strategic Planning, New Technology Foundation, said once in a speech, "Anybody who thinks they can inculcate teachers with anything on a mandatory basis is nuts." The trick then is to design your professional development activities in a way that ensures that teachers' time and your investment in time and money pay off in increased student achievement.

Getting teacher buy in is important when technology is involved, especially for those who are not convinced technology is worth the time and effort. The first step of any sound professional development program is to develop a belief about technology professional development that includes the idea that the curriculum drives the use of technology, not vice-versa, and that empowered teachers will find appropriate ways to include technology with their ongoing instruction rather than view it as an activity unconnected to the district's content standards. Research and best teaching practices consistently show that without effective staff development and continuous support, technology integration will never be satisfactorily achieved (Bailey and Powell, 1998).

Technology professional development programs are successful when they focus on the teacher's stage of use. A teacher afraid of technology or a beginning user would be lost in a class for power users.

In 1992, Mandinach described four stages of technology use: survival, mastery, impact and innovation. Here is a description of the four stages:

A teacher in the survival stage:

- Struggles against technology;

- Is assailed by problems (everything that can go wrong will);

- Doesn't change the status quo in the classroom;

- Uses technology only for directed instruction;

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Has management problems planning how to have 30 students access a few computers;

- Has unrealistic expectations, believing that technology use by itself will result in higher academic performance.

A teacher in the mastery stage:

- Has increased tolerance to hardware and software problems;

- Begins to use new forms of interaction with students and class room practices;

- Has increased technical competence and can troubleshoot simple problems.

A teacher in the impact stage:

- Regularly incorporates new working relationships and class room structures;

- Balances instruction and construction;

- Is rarely threatened by technology;

- Regularly creates technology enhanced instructional units.

A teacher in the innovation stage:

- Modifies his or her classroom environment to take full advantage of technology enhanced curriculum and learning activities.

These stages of use closely mirror those described by David Dwyer (1994) and Dwyer, Ringstaff and Sandholtz (1991) in their Apple Classroom of Tomorrow (ACOT) research. Even with extensive professional development and coaching it can take a teacher from 3 to 5 years to reach the mastery and impact stages.

Here are six technology professional development systems implemented by districts that will help teachers reach impact and mastery levels.

1. After school. This is the typical format for most districts. It is also among the lease effective. Teachers are tired at the end of the day, and intense concentration can be difficult. The system works best to raise awareness, introduce concepts or to learn about easy-to-use applications.

2. Technology Rover/Prep Shops. This delivery system brings just in time training. Teachers sign up for an hour of individual coaching, indicating their training need. The school hires a floating substitute for the day; the trainer provides the needed assistance; and the teacher receives individual training targeted to his or her individual need. At schools where teachers have prep time, they sign up during their prep period. This system has been very cost effective for delivering training to help teachers with specific hardware or software applications.

3. Mini Grants. Teachers value the incentives of time and money. Provide a small $300-$500 grant to a teacher to learn a piece of hardware, software application or develop a technology-enhanced unit. As a condition for receiving the grant, the teacher agrees to train others about what he or she has learned.

4. Summer or Off Track Institutes. Research (Dwyer, 1994) found that teachers reform their teaching practices when they have the time to learn new hardware and software applications and reflect on their present teaching practices. Multi-day institutes are one of the most effective delivery systems for supporting teachers in their efforts to fully incorporate technology with the instructional program because teachers are not tired from teaching or thinking about what a substitute is doing in their classrooms.

5. Distance Learning. Anytime, anywhere learning can be an alternative to face-to-face instruction. Districts can contract with either a profit or non-profit provider or develop their own. Distance learning has the advantage of allowing teachers to access professional development at a time and location convenient for them. The Distance Learning Network (www.dlrn.org) is a good place to begin your search for distance learning professional development courses. A non-profit source for online courses is CTAP Online, a site devoted to helping teachers understand, apply and teach technology in their classroom (www.ctaponline.org).

6. Research based professional development programs. These programs can provide professional development that will make a difference for teachers. EMints

(http://emints.more.net) and Environmental and Spatial Technology (www.eastproject.org/Portal/) are two examples of research based professional development programs that are successful.

In addition, WestEd RTEC has developed a set of tools to assist you in planning, monitoring and assessing the level of technology use by administrators, teachers and students (visit http:// www.edgateway.net/cs/tk/print/rtec_docs/prof_dev.html).

As you consider your technology professional development program, the following lists of what works and what does not describe some issues to ponder.

What works:

- Getting input from stakeholders;

- Helping principals to be champions for professional development;

- Grouping teachers by grade level or subject;

- Evaluating all professional development activities and reorganize as needed;

- Providing time for hands-on activities;

- Focusing content on curriculum instead of software;

- Modeling classroom examples;

- Being flexible and listening to teachers needs;

- Creating a technology enhanced lesson plan;

- Providing access to appropriate hardware and software.

What does not work:

- Top down decisions without teacher input;

- No involvement from principals;

- Little or no planning;

- "Spray and pray" - a one-hour workshop with no follow-up;

- Lots of instructor talk with little time for hands-on;

- Show and tell sessions;

- No evaluation or feedback.

You have reviewed the research, listened to teachers and principals, and provided time for learning. To determine if your technology professional development program is making a difference in how teachers incorporate technology, look for the following indicators of success:

1. Classroom instruction is redesigned.

2. There is a change in the learning environment, from the teacher as the director of learning to the teacher as a facilitator of learning. 3. How many teachers who receive training become trainers? 4. Teacher renewal and enthusiasm. 5. Increased teacher collaboration. 6. Technology is a catalyst for more powerful student learning.

If these factors are in evidence, then your technology professional development program is impacting how teachers use technology in their classrooms.

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